

CLAIMS

What is claimed is:

1. A circuit for discharging a high voltage signal
5 to a supply voltage line, the circuit comprising:

a first switch receiving the high voltage signal,
the first switch having an output;

a second switch having an input coupled with the
output of the first switch, the second switch having an
10 output; and

a third switch having an input coupled with the
output of the second switch, the third switch having an
output coupled with the supply voltage line;

wherein when the first, second, and third switches
15 are on, the high voltage signal discharges to the supply
voltage line.

2. The circuit of claim 1, further comprising:

a fourth switch clamping said high voltage signal to
a ground, the fourth switch having an input coupled with
20 the high voltage signal and an output coupled with said
ground.

3. The circuit of claim 2, wherein the fourth
switch has a control coupled with the output of the first
switch such that when the high voltage signal is
25 discharging and approaches a voltage level of

approximately said ground, the fourth switch turns on and clamps the high voltage signal to said ground.

4. The circuit of claim 1, further comprising:

a fourth switch for clamping said high voltage
5 signal to a ground, the fourth switch having an input
coupled with the high voltage signal and an output; and

a fifth switch having an input coupled with the
output of the fourth switch and an output coupled with
said ground, wherein when the fifth switch is off, the
10 high voltage signal is not coupled with ground.

5. The circuit of claim 1, further comprising:

control logic for selectively activating the third
switch.

6. The circuit of claim 1, further comprising:

a fourth switch having an input coupled with the
15 output of the second switch, the fourth switch having an
output coupled with the supply voltage line; and

control logic for selectively activating either the
third switch or the fourth switch to discharge the high
20 voltage signal.

7. The circuit of claim 1, wherein the high
voltage supply is a signal in the range of 0 to -5 volts.

8. The circuit of claim 1, wherein the high voltage supply is a signal in the range of approximately 0 to -3.3 volts.

9. The circuit of claim 1, wherein the first
5 switch is a n-channel transistor.

10. The circuit of claim 1, wherein the second switch is a p-channel transistor.

11. The circuit of claim 1, wherein the third switch is a p-channel transistor.

10 12. The circuit of claim 2, wherein the fourth switch is a n-channel transistor.

13. The circuit of claim 1, wherein the high voltage supply is a signal in the range of 5 to 10 volts.

14. The circuit of claim 1, wherein the first
15 switch is a p-channel transistor.

15. The circuit of claim 1, wherein the second switch is a n-channel transistor.

16. The circuit of claim 1, wherein the third switch is a n-channel transistor.

20 17. The circuit of claim 2, wherein the fourth switch is a p-channel transistor.

18 20. A method for discharging a high voltage signal, the method comprising:

providing a discharge path from the high voltage
signal to a supply line;

discharging the high voltage signal to the supply
line through the discharge path; and

5 providing a clamping device which senses said
discharging, said clamping device activating when the
high voltage signal approaches a voltage level of
approximately said supply line.

19 ¹⁹ 21. The method of claim 1, wherein the clamping
10 device deactivates when the clamping device detects that
the high voltage signal is increasing in magnitude.

20 ²⁰ 22. The method of claim 1, wherein the supply line
is a ground connection.

21 ²¹ 23. The method of claims 1, wherein the supply line
15 is a positive supply reference.